

## CLAIMS

What is claimed is:

- 1 1. A method for retiring instructions processed through various processing stages,  
2 comprising the steps of:  
3 for each instruction capable of early retirement and at each stage of the various  
4 stages,  
5 processing the instruction in accordance with the stage;  
6 if the instruction meets the criteria for early retirement, then  
7 terminating the instruction; and  
8 updating a state of a system processing the instruction to reflect  
9 that the instruction has been terminated.
- 1 2. The method of claim 1 further comprises the step of proceeding the instruction to a  
2 next stage if the instruction does not meet the criteria for early retirement.
- 1 3. The method of claim 1 wherein the various processing stages include one or more of  
2 the following stages: fetching, issuing, sorting, executing, queuing, and retiring.
- 1 4. The method of claim 1 wherein the each instruction capable of early retirement  
2 includes an identification tag for identifying whether the instruction is capable of early  
3 retirement.

1 5. The method of claim 1 wherein NO-OP instructions, pre-fetch instructions, branch  
2 instructions, nullified instructions, and predicated-false instructions are identified as  
3 instructions capable of early retirement.

1 6. The method of claim 1 wherein the criteria for early retirement are met when  
2 continued processing the instruction does not change the architectural state of the  
3 system processing the instruction.

1 7. The method of claim 1 wherein the criteria for early retirement are met when  
2 continued processing the instruction does not change the behavior of a program  
3 running the instruction.

1 8. A computer-readable medium embodying instructions that cause a computer to  
2 perform a method for retiring instructions processed through various processing stages,  
3 the method comprising the steps of:

4 for each instruction capable of early retirement and at each stage of the various  
5 stages,  
6 processing the instruction in accordance with the each stage;  
7 if the instruction meets the criteria for early retirement, then  
8 terminating the instruction; and  
9 updating a state of a system processing the instruction to reflect  
10 that the instruction has been terminated.

1 9. The computer-readable medium of claim 8 wherein the method further comprises the  
2 step of proceeding the instruction to a next stage if the instruction does not meet the  
3 criteria for early retirement.

1 10. The computer-readable medium of claim 8 wherein the various processing stages  
2 include one or more of the following stages: fetching, issuing, sorting, executing,  
3 queuing, and retiring.

1 11. The computer-readable medium of claim 8 wherein the instruction capable of early-  
2 retirement includes an identification tag for identifying whether the instruction is  
3 capable of early retirement.

1 12. The computer-readable medium of claim 8 wherein NO-Op instructions, pre-fetch  
2 instructions, branch instructions, nullified instructions, and predicated-false  
3 instructions are identified as instructions capable of early retirement.

1 13. The computer-readable medium of claim 8 wherein the criteria for early retirement are  
2 met when continued processing the instruction does not change the architectural state  
3 of the system processing the instruction.

1 14. The computer-readable medium of claim 8 wherein the criteria for early retirement are  
2 met when continued processing the instruction does not change the behavior of a  
3 program running the instruction.

1 15. A system for retiring instructions processed through various processing stages,  
2 comprising:  
3 for each instruction capable of early retirement and at each stage of the various  
4 stages,  
5 a first processing unit for processing the instruction in accordance with  
6 the stage; and  
7 a second processing unit for, if the instruction meets the criteria for  
8 early retirement,  
9 terminating the instruction; and  
10 updating a state of the system to reflect that the instruction has  
11 been terminated.

1 16. The system of claim 15 further comprises a third processing unit for proceeding the  
2 instruction to a next stage if the instruction does not meet the criteria for early  
3 retirement.

1 17. The system of claim 15 wherein the each instruction capable of early retirement  
2 includes an identification tag for identifying whether the instruction is capable of early  
3 retirement.

1 18. The system of claim 15 wherein NO-OP instructions, pre-fetch instructions, branch  
2 instructions, nullified instructions, and predicated-false instructions are identified as  
3 instructions capable of early retirement.

1 19. The system of claim 15 wherein the criteria for early retirement are met when  
2 continued processing the instruction does not change the architectural state of the  
3 system.

1 20. The system of claim 15 wherein the criteria for early retirement are met when  
2 continued processing the instruction does not change the behavior of a program  
3 running the instruction.